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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,130	09/25/2001	Carl Milton Wildrick	AINNO.0101	9987

7590

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EXAMINER

DINH, TUAN T

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 04/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,130

Applicant(s)

WILDRICK ET AL.

Examiner

Tuan T Dinh

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12,14-18,29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12,14-18,29 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election without traverse of claims 1-12, 14-18, and 29-30 in Paper No. 3 is acknowledged.

Applicant's election with traverse of Figure 6C in Paper No. 2 is acknowledged. The traversal is on the ground(s) that the searches for Embodiment I, II, and III would be co-extensive. This is not found persuasive because figure 6C shows side slots (340) would be different of Figure 6B showing a hole (314). However, Applicant has been canceled claim 13 that being teach the limitation in figure 6C.

Claim Objections

2. Claims 3 and 16 are objected to because of the following informalities:
Claim 16, lines 1-2, change "hole there through" to --through hole--.
Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Schneider et al. (U. S. Patent 4,362,904).

As to claims 14, 16-17, Schneider discloses an interconnect (10-figure 1, column 3, line 17) as shown in figures 1-3 comprising:

first and second sidewalls (22, 24, column 3, line 31) being approximately identical;

a contact surface (20, column 3, line 30) having at least one through holes (26, 28, column 3, lines 35-36); and

wherein the interconnect is generally U-shaped (see figure 1).

As to claim 15, Schneider discloses the interconnect as shown in figures 1-3 wherein said interconnect is conductive (column 2, lines 42-47).

As to claim 18, Schneider discloses the interconnect wherein the height of the first and second sidewalls are **within** 2 mils of each other.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-12, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art (PA, submitted by applicant) in view of Schneider et al. (U. S. Patent 4,362,904).

As to claims 1-6, 8, and 29-30, PA discloses a power module (100) and a method as shown in figures 1-4 comprising:

a FR4 board (110) formed from a plurality of layers having at least one element, which is a pair of planar magnetic cores (130), mounted thereon; and

at least one interconnect (240-figure 4) for electrically coupling the element to an end user's circuit card (10-figure 4).

PA does not teach the interconnect is U-shaped having a sidewall and a contact surface, the contact surface includes a through hole.

Schneider shows a interconnect (10) being formed U-shaped having a sidewall (22; 24) and a contact surface (20), the contact surface includes a through hole (26; 28).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a structure of the interconnect having a U-shape as taught by Schneider to employ the power module and method of PA in order to provide a table against vibrating or other undesired movement of one board mounted to another board.

As to claim 7, PA discloses a power module as shown in figures 1-4 wherein said board further comprises a surface for engagement with a pick and place machine (page 6, line 12).

As to claim 9, PA discloses a power module as shown in figures 1-4 wherein said board is stiffened by a metallic layer within the board.

As to claim 10, PA and Schneider do not teach said at least one interconnect comprises three interconnects that are placed to form a stable plane.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use three interconnect placed on the power module in order to support to the power module as taught by PA and Schneider, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

As to claim 11, PA discloses a power module as shown in figures 1-4 wherein a solder paste is used to couple the interconnect to the end user circuit card.

As to claim 12, PA discloses a power module as shown in figures 1-4 wherein a thickness of said solder paste is greater than a combined tolerance of the board, the interconnect, and the end user circuit card.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Serino, Tomura et al., Chandler et al., and Keidl et al. disclose related art.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TD
April 17, 2002


KAMAND CUNEO
PRIMARY EXAMINER